



September 25, 2017

*By Electronic Filing*

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Re: Applications and U.S. Market Access Petitions for Q/V-band NGSO Systems  
IBFS File Nos. SAT-PDR-20170301-00023, SAT-AMD-20170301-00026 & SAT-LOA-  
20170301-00027

Dear Ms. Dortch:

Hughes Network Systems, LLC (“Hughes”) submits these comments on the above-referenced applications and U.S. market access petitions (collectively, “Applications”), filed by O3b Limited, Space Exploration Holdings, LLC, and Telesat Canada (collectively, the “Applicants”),<sup>1</sup> for non-geostationary satellite orbit (“NGSO”) operations in the 37.5-42.0 GHz (downlink) and the 47.2-50.2 GHz and 50.4-51.4 GHz (uplink) bands (collectively, “Q/V-band”).

As the Commission has noted, 34 million people across the United States live in areas that lack sufficient access to terrestrial fixed, high-speed Internet.<sup>2</sup> As the nation’s leading provider of satellite broadband, Hughes is meeting this demand by deploying a fleet of geostationary satellite orbit (“GSO”) satellites to provide ubiquitous, cost-efficient, and resilient broadband services to customers in areas of the country that are unserved or underserved by traditional terrestrial broadband networks. To support future broadband needs, Hughes is expanding its broadband satellite fleet and has a pending application for Commission authority to launch and operate a next-generation satellite, HNS 95W, using Q/V-band and other spectrum.<sup>3</sup> The HNS 95W satellite will greatly increase Hughes’ satellite broadband capacity and bring additional competition to the marketplace for broadband connectivity in the United States and throughout the Americas.<sup>4</sup> Because the HNS 95W satellite will rely critically upon use of the same Q/V-band spectrum proposed in the Applications, Hughes urges the Commission to take action to ensure meaningful spectrum sharing between future GSO and NGSO operations.

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<sup>1</sup> See Telesat Canada (“Telesat”), Petition for Declaratory Ruling, IBFS File Nos. SAT-PDR-20170301-00023 (Mar. 1, 2017); Space Exploration Holdings, LLC (“SpaceX”), Application, IBFS File No. SAT-LOA-20170301-00027 (Mar. 1, 2017); O3b Limited (“O3b”), Amendment, IBFS File No. SAT-AMD-20170301-00026 (Mar. 1, 2017).

<sup>2</sup> See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2016 Broadband Progress Report, 31 FCC Rcd 699, ¶ 79 (2016).

<sup>3</sup> See Hughes, Application, IBFS File No. SAT-LOA-20170621-00092 (June 21, 2017) (“HNS 95W Application”); see also Press Release, “Hughes Selects Space Systems Loral To Build Next-Generation Ultra High Density Satellite”, Aug. 11, 2017 (available at <https://www.hughes.com/who-we-are/resources/press-releases/hughes-selects-space-systems-loral-build-next-generation-ultra>).

<sup>4</sup> See HNS 95W Application, *supra* n.3, at 1, 4.

## **Need for Band-Specific Rules, Compliance with EPFD and Other Technical Limits to Protect GSO Operations**

Given the lack of GSO/NGSO sharing criteria and band-specific service rules for the Q/V-band, the Commission should promptly initiate a rulemaking to adopt such rules, including single-entry and aggregate equivalent power flux density (“EPFD”) limits to protect GSO systems. Although technical studies are under review at the International Telecommunication Union (“ITU”) to develop EPFD limits for the Q/V-band, the Commission should conduct its own independent assessment of such limits and enact appropriate limits.

The Commission should condition any grant of the Applications upon compliance with any applicable EPFD or technical limits that may be adopted by the Commission or ITU in the future. Until such limits are adopted, the Commission should consider applying interim or default EPFD limits comparable to the EPFD limits specified in Article 22 of the ITU Radio Regulations.<sup>5</sup> The Commission already has adopted the Article 22 EPFD limits (both single-entry and aggregate) as requirements for NGSO operations in the Ku-band,<sup>6</sup> and also has authorized NGSO operations in the Ka-band based upon compliance with these limits.<sup>7</sup> Similarly, the Commission reasonably should base any grant of the Applications upon a demonstration of compliance with interim/default EPFD limits comparable to the Article 22 EPFD limits, and require all of the Applicants to provide an independently verifiable showing of compliance prior to any grant, disclosing the technical basis for their showing and the input parameters used to determine compliance. The Commission further should adopt a realistic and practicable mechanism to ensure that aggregate EPFD limits are met by all licensed Q/V-band NGSO systems.

### **Compliance with Existing Milestone Requirements**

Hughes objects to SpaceX’s open-ended request for waiver of the Commission’s milestone obligations.<sup>8</sup> This request to waive the requirement “to the extent necessary” without a commitment to launch its full constellation on a timely basis is not in the public interest and should be denied.

The Commission’s license milestone obligations ensure that all market participants have fair opportunity access to orbital and spectrum resources without warehousing.<sup>9</sup> The requested waiver of the milestones could result in an inefficient use of the spectrum; something that milestones expressly protect against. Further, waiver of the milestones would hamper the coordination process between NGSO and GSO operators, impacting the near-term use of spectrum while there remains a possibility that additional satellites will be launched.

If a proposal within the Draft Order on NGSO Fixed-Satellite Systems circulated in advance of the September 26 open Commission meeting is adopted, NGSO operators will be required to deploy at least fifty percent of the authorized constellation within six years of license grant, with the remaining constellation to be deployed within nine years of the grant.<sup>10</sup> Licensees failing to meet the first milestone will be authorized only for a reduced number of satellites in use on the milestone date and will be

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<sup>5</sup> See ITU Radio Regulations, Article 22, Section II.

<sup>6</sup> See 47 C.F.R. § 25.208(g)-(m).

<sup>7</sup> See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Notice of Proposed Rulemaking, IB Docket 16-408, ¶ 19 n.51 (2016) (citing FCC authorizations); see also Draft Order in the same docket, ¶ 35 (September 7, 2017) (proposing to adopt ITU EPFD limits in the 17.8-30 GHz frequency range) (*available at* [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2017/db0907/DOC-346584A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0907/DOC-346584A1.pdf)).

<sup>8</sup> 47 C.F.R. § 25.164(b).

<sup>9</sup> 47 C.F.R. § 25.164(b); *In re Amendment of Commission’s Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760, 10827-28 ¶ 173-175 (2003).

<sup>10</sup> *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Draft Order, IB Docket 16-408, ¶¶ 66-67 (September 7, 2017)

required to forfeit their bond. Hughes supports this proposal, which will provide NGSO operators added flexibility while ensuring that scarce spectrum is not warehoused.

### **Applicability of Section 25.156(d)(5)**

Hughes notes SpaceX's and Telesat's request for waiver of Section 25.156(d)(5) to the extent it applies. Hughes has requested a waiver of this rule and other band sharing rules in its application for HNS 95W in order to "permit the use of the full range of the requested Q/V-band frequencies on a shared, coordinated basis with NGSO licensees."<sup>11</sup>

Hughes reiterates its support for shared, coordinated use of the Q/V-band among GSO and NGSO systems. If the Commission waives the applicability of Section 25.156(d)(5) to the SpaceX or Telesat applications, it should condition any grant of an application upon compliance with whatever service rules the Commission may ultimately adopt for sharing between GSO and NGSO systems in the Q/V-band. These rules should permit operation of both GSO and NGSO systems in the Q/V band.

### **Conclusion**

Based upon the foregoing, Hughes urges the Commission to take the following actions: (i) require all Applicants to demonstrate compliance with interim/default EPFD limits comparable to the Article 22 EPFD limits (both single-entry and aggregate); (ii) condition any grant of the Applications upon compliance with any applicable EPFD or other technical limits adopted by the Commission or ITU in the future; (iii) promptly commence a rulemaking to adopt Q/V-band service rules, including EPFD limits to protect GSO operations; (iv) deny SpaceX's milestone waiver request; and (v) condition any waiver of Section 25.165(d)(5) upon compliance with sharing rules that permit the operation of both GSO and NGSO systems in the Q/V-band. Such actions will ensure that both GSO and NGSO systems can operate successfully in the Q/V-band and protect against spectrum speculation.

Please direct any questions regarding this matter to the undersigned.

Respectfully,

/s/ Jennifer A. Manner

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<sup>11</sup> See HNS 95W Application, *supra* n.3, narrative, at 13-14 & n.60.

cc: Jose Albuquerque  
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## CERTIFICATE OF SERVICE

I, Brennan T. Price, hereby certify under penalty of perjury that the foregoing Comments were served this 25th day of September, 2017, by depositing a true copy thereof with the United States Postal Service, first class postage pre-paid, addressed to:

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